**Scientific Method Pre-Assessment Rubric (max 76 points)**

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| **#** | **Sample Answer(s)** | **Exemplary (4)**  completely correct answer and exceptional explanation (shows a strong understanding of the process of science, not just this problem’s content) | **Proficient (3)**  correct answer and adequate explanation | **Developing (2)**  answer or explanation is only partially correct | **Unacceptable (1)**  incorrect answer and an inadequate or absent explanation |
| **1** | Which energy drink most improves basketball performance? |  |  |  |  |
| **2** | If Red Bull is the best energy drink, then Bill will earn more points when he drinks it before the game. OR Red Bull is the best energy drink and will help Bill earn more points. |  |  |  |  |
| **3** | Brand of energy drink is the IV because it is what Bill is testing and/or changed | x3 | x3 | x3 | x3 |
| **4** | The number of points per game is the DV because it is what is being measured and/or it depends on the type of drink | x3 | x3 | x3 | x3 |
| **5** | amount of drink, amount of time consumed before game, length of time in game, time of day, what he ate before the game | x3 | x3 | x3 | x3 |
| **6** | Water because it allows us to see how Bill performs without any energy drink |  |  |  |  |
| **7** | He averaged the points he scored from all the games in which he consumed the same drink type |  |  |  |  |
| **8** | Not really. Although Red Bull had the highest average points, it wasn’t significantly different from the others. |  |  |  |  |
| **9** | He assigned the beverages to games throughout the season instead of doing all water in the first 5 games, red bull in the next 5 etc. That way he minimized the effect of possible improvement in scoring over the season. |  |  |  |  |
| **10** | More replications, have other people participate as well to get more data, set up multiple games against the same team to ensure that game differences didn’t influence the results | x2 | x2 | x2 | x2 |
| **11** | Who was playing in each game, who they were playing against | x2 | x2 | x2 | x2 |